CLAIMS

1. Internet forwarding method, for forwarding internet packets from a host connected to an internet towards a destination host (DH) connected to a private internet network (PNW), where said internet network (INW) and said private internet network (PNW) are coupled through at least one edge router, and where said destination host (DH) is assigned a global Internet address, **CHARACTERISED IN THAT** said forwarding of said internet packets from one of said at least one edge router (ER) towards said destination host (DH), is based only on said global internet address.

2. Internet forwarding method according to claim 1, **CHARACTERISED IN THAT** said forwarding from one of said at least one edge router (ER) comprises the following sub-steps of:

a. activating a router daemon at said destination host (DH) by assigning said global internet address;

b. notifying each router (R1 - R6) of said private internet network (PNW) about the presence of said destination-host by said router-daemon using Open Shortest Path First protocol flooding;

c. updating a routing-table for each of said routers; and

d. forwarding said internet packets based on said routing tables of said routers in said internet network (INW) towards said destination host (DH).

3. Internet forwarding method according to claim 1, **CHARACTERISED IN THAT** said forwarding from one of said at least one edge router (ER) comprises the following sub-steps of:

a. notifying each router (R1- R6) of said private network (PNW) situated on a shortest path between said destination host DH and said one of said at least one edge router and said one of said at least one edge

router (ER) by sending a Resource Reservation Protocol set-up message at assignment of a global Internet address;

b. updating a routing-table of said each router (R1 - R6) in said internet network (INW) on said shortest path towards said one of said at least one edge router (ER) and notifying said one of said at least one edge router (ER); and

c. forwarding said internet packets from said one of said at least one edge router (ER) towards said destination host (DH) along said shortest path.

4. Internet forwarding method according to claim 1, **CHARACTERISED IN THAT** said forwarding from one of said at least one edge router (ER) comprises the following sub-steps of:

a. activating said destination host (DH) by assigning said global internet address;

b. sending a multicast join message by said destination host (DH) towards said edge-router in order to join a multicast-group set-up by said edge router;

c. constructing a branch of a multicast tree between said destination host (DH) and said edge router; and

d. forwarding said internet packets from said edge router (ER) towards said destination host (DH) along said branch of said multicast tree.

5. Internet forwarding system, for forwarding internet packets from a host connected to an internet towards a destination host (DH) connected to a private internet network (PNW), where said internet network (INW) and said private internet network (PNW) are coupled through at least one edge router, and where said destination host (DH) is assigned a global Internet address, **CHARACTERISED IN THAT** said internet forwarding system comprises a forwarding means, adapted to route said internet packets from one of said at

least one edge router (ER) towards said destination host (DH) based only on said global internet address.

6. Internet forwarding system according to claim 5,

CHARACTERISED IN THAT said forwarding means comprises the following sub-means:

a. router daemon waking means, adapted to activate a router daemon at said destination host (DH) by assigning said global internet address;

b. notification means, adapted to notify each router (R1 - R6) of said private internet network (PNW) about the presence of said destination-host by said router-daemon using Open Shortest Path First protocol flooding;

c. updating means, adapted to update a routing-table for each of said routers; and

d. forwarding means, adapted to forward said internet packets based on routing tables of said routers in said internet network (INW) towards said destination host (DH).

7. Internet forwarding system according to claim 5,

CHARACTERISED IN THAT said forwarding means comprises the following sub-means:

a. notification means, adapted to notifying each router (R1- R6) of said private network (PNW) situated on a shortest path between said destination host DH and said one of said at least one edge router and said one of said at least one edge router (ER) by sending a Resource Reservation Protocol set-up message at assignment of a global Internet address;

b. routing-table updating means, adapted to update routing tables of said each router (R1 - R6) in said internet network (INW) on said shortest path towards said edge router; and

c. forwarding means, adapted to forward said internet packets from said edge router (ER) towards said destination host (DH).

8. Internet forwarding system according to claim 5, **CHARACTERISED IN THAT** said forwarding means comprises the following sub-means:

a. assignment detection means, adapted to activate said destination host (DH) by assigning said global internet address;

b. path establishment requesting means, adapted to send a multicast join message by said destination host (DH) towards said edge-router in order to join a multicast-group set-up by said edge router;

c. path constructing means, adapted to build up a multicast tree between said destination host (DH) and said edge router; and

d. forwarding means, adapted to forward said internet packets from said edge router (ER) towards said destination host (DH) along said multicast tree.

9. Destination host (DH) for use in a private internet network (PNW) internet packets being forwarded from said destination host (DH) towards a host (CH) connected an internet network (INW) or vice versa, said private internet network (PNW) comprising at least one router (R1-R6) and at least one said destination host (DH), each coupled to one of said at least one router (R1-R6), said private internet network (PNW) being coupled to said internet network (INW) through at least one edge router (ER) and where said destination host (DH) is assigned a global internet address, said destination host (DH) comprising:

a. internet packet sending and reception means (PSRM), adapted to either send or receive said internet packets, **CHARACTERISED IN THAT** said destination host (DH) further comprises the following means:

b. routing daemon means (DRM), adapted to notify each adjacent router, from said at least one router (R1-R6), of said destination host (DH) about the

presence of said destination host (DH) using a Open Shortest Path First protocol flooding and said global internet address;

c. an assignment detection means (ADM), adapted to detect if said destination host has been configured for internet connectivity and said global internet address has been assigned; and

d. router daemon waking means (RDWM), adapted to activate said router daemon means at assignment of said global internet address.

10. Destination host (DH) for use in a private internet network (PNW), internet packets being forwarded from said destination host (DH) towards a host (CH) connected to an internet network (INW) or vice versa, said private internet network (PNW) comprising at least one router (R1 - R6) and at least one said destination host (DH), each coupled to one of said at least one router, said private internet network (PNW) being coupled to said internet network (INW) through at least one edge router (ER) and wherein said destination host is assigned a global internet address, said destination host (DH) comprising:

a. internet packet sending and reception means (PSRM1), adapted to either send internet packets or receive said internet packets, **CHARACTERISED IN THAT** said destination host (DH) further comprises the following means;

b. assignment detection means (ADM1), adapted to detect if said destination host (DH) has been configured for internet connectivity and a global internet address has been assigned; and

c. adjacent router notification means (ARNM), coupled with an input to an output of said assignment detection means (ADM1) and adapted to send a Resource Reservation Protocol message containing said global internet address to an adjacent router (R1 - R6) of said destination host (DH) along a shortest path in direction of said edge router (ER) in order to update a routing-table of said adjacent router.

11. Router (R1- R6) for use in a private internet network (PNW), internet packets being forwarded from a destination host (DH) of said private internet network (PNW) towards a host (CH) connected to an internet network (INW) or vice versa, said private internet network (PNW) comprising at least one said router (R1 - R6) and at least one said destination host (DH), each coupled to one of at least one said router, said private internet network (PNW) being coupled to said internet network (INW) through at least one edge router (ER), said router (R1- R6) comprising :

a. message reception means (MRM) adapted to receive a Resource Reservation Protocol message, **CHARACTERISED IN THAT** said router further comprises the following means:

b. message interpretation means (MIM), coupled with an input to an output of said message reception means (MRM) and adapted to interpret said Resource Reservation Protocol message containing said global internet address of said destination host (DH);

c. routing-table updating means (RUM), coupled with an input to an output of said message interpretation means (MIM) and adapted to update a routing-table with said global internet address of said destination host (DH); and

d. message forwarding means (MFM), coupled with an input to an output of said routing-table updating means (RUM) and adapted to forward said Resource Reservation Protocol message containing said global internet address of said destination host (DH) towards an adjacent router or edge router (ER) on a shortest path between said destination host (DH) and said edge router.

12. Edge router (ER) for use in a private internet network (PNW), internet packets being forwarded from a destination host (DH) of said private internet network (PNW) towards a host (CH) connected to an internet network (INW) or vice versa, said private internet network (PNW) comprising at least one

said router (R1 - R6) and at least one said destination host (DH), each coupled to one of said at least one said router, said private internet network (PNW) being coupled to said internet network (INW) through at least one said edge router (ER), said edge router (ER) comprising :

a. message reception means (MRM1) adapted to receive a Resource Reservation Protocol message, **CHARACTERISED IN THAT** said edge router (ER) further comprises the following means:

b. message interpretation means (MIM1), coupled with an input to an output of said message reception means (MRM1) and adapted to interpret said Resource Reservation Protocol message containing said global internet address of said destination host (DH); and

c. routing-table updating means (RUM1), coupled with an input to an output of said message interpretation means (MIM1) and adapted to update a routing-table with said global internet address of said destination host.

13. Destination host (DH) for use in a private internet network (PNW), internet packets being forwarded from said destination host (DH) towards a host (CH) connected to an internet network (INW) or vice versa, said private internet network (PNW) comprising at least one router (R1 - R6) and at least one said destination host (DH), each coupled to one of said at least one router and where said destination host is assigned a global internet address, said private internet network (PNW) being coupled to said internet network (INW) through at least one edge router (ER), said destination host (DH) comprising:

a. internet packet sending and reception means (PSRM2), adapted to either send internet packets or receive said internet packets **CHARACTERISED IN THAT** said destination host (DH) further comprises the following means:

b. assignment detection means (ADM3), adapted to detect if said destination host (DH) gets internet connectivity and a global internet address is assigned; and

c. multicast subscription means (MCSM), coupled with an input to an output of said assignment detection means (ADM3) and adapted to notify an adjacent router (R1 – R6) of said private internet network (PNW) on a shortest path towards said edge router (ER) about the presence of a subscribing destination host (DH) using a multicast protocol and said global internet address.

14. Router (R1 – R6) for use in a private internet network (PNW), internet packets being forwarded from a destination host (DH) of said private internet network (PNW) towards a host (CH) connected to an internet network (INW) or vice versa, said private internet network (PNW) comprising at least one said router (R1 - R6) and at least one said destination host (DH), each coupled to one of said at least one router and wherein said destination host (DH) is assigned a global internet address, said private internet network (PNW) being coupled to said internet network (INW) through at least one edge router (ER),

CHARACTERISED IN THAT said router (R1 – R6) comprises:

a. message reception means (MRM2), adapted to receive a multicast message containing said global internet address;

b. multicast group updating means (MGUM), coupled with an input to an output of said message reception means (MRM2) and adapted to interpret said multicast message containing said global internet address of said destination host (DH) and update a multicast group in order to establish a branch of a multicast tree; and

c. message forwarding means (MFM2), coupled with an input to an output of said multicast group updating means (MGUM) and adapted to forward a multicast message containing said global internet address of said destination host (DH) towards an adjacent router or edge router (ER) on a shortest path between said destination host (DH) and said edge router.

15. Edge Router (ER), for use in a private internet network (PNW), internet packets being forwarded from a destination host (DH) of said private

internet network (PNW) towards a host (CH) connected to an internet network (INW) or vice versa, said private internet network (PNW) comprising at least one router (R1 - R6) and at least one said destination host (DH), each coupled to one of said at least one router and wherein said destination host (DH) is assigned a global internet address, said private internet network (PNW) being coupled to said internet network (INW) through at least one said edge router (ER), **CHARACTERISED IN THAT** said edge router (ER) comprising:

a. message reception means (MRM3), adapted to receive a multicast message containing said global internet address; and

b. multicast group updating means (MGUM1), coupled with an input to an output of said message reception means (MRM3) and adapted to interpret said multicast message containing said global internet address of said destination host (DH) and update a multicast group based on said global internet address in order to establish a branch of a multicast tree.